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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,578	10/31/2003	Masaaki Kurebayashi	16869P-097100US	1657
20350 7590 03/20/2007 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER ALUNKAL, THOMAS D	
			ART UNIT	PAPER NUMBER
			2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/698,578	Applicant(s) KUREBAYASHI ET AL.	
	Examiner Thomas D. Alunkal	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-9, 12, 13 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-9, 12, 13 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) <input type="checkbox"/> Notice of Informal Patent Application
6) <input type="checkbox"/> Other: _____ |
|--|--|

DETAILED ACTION

Applicant's election without traverse of Group I, Species I (corresponding to claims 4-9, 13, and 18-23, which are currently pending) in the reply filed on 2/9/07 is acknowledged.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3-4, 12-13, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (US PgPub 2003/0123352).

Regarding claim 3, Chen discloses a method for controlling a writing waveform on an optical disk in an optical disk apparatus in which information is written to said optical disk while a write speed is varied (Abstract), said method comprising the steps of from optimum writing waveforms each established for one of a plurality of write speeds

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(Figure 3, Element 100), determining a writing waveform parameter for an arbitrary speed other than said plurality of write speeds (Figure 3, Element 108), irradiating laser light to said optical disk based on said writing waveform parameter to write information (Figure 3, Element 118), and based on information on at least a first writing waveform parameter and a second writing waveform parameter optimum for a highest write speed and a lowest write speed (Figure 3, Elements 100 and 102), and a third writing waveform parameter for a middle speed therebetween (Paragraph 50, lines 6-12. More specifically, any write speed between the inner and outer circumferences is also a reference parameter (namely, the middle speed)), deriving a writing waveform parameter for each speed between said highest and said lowest speed (Figure 3, Element 108).

Regarding claim 4, Chen discloses an optical disk driving writing system in which constant angular velocity (CAV) writing is performed (Paragraph 12) with an outermost circumference and an innermost circumference (of said disk) set to said highest speed and said lowest speed corresponding to said first waveform parameter and said second writing waveform parameter (Paragraph 13), respectively, determining a writing waveform parameter for each speed between said inner(most) and outer(most) circumferences when CAV writing is performed based on said information on said third writing waveform parameter for said middle write speed between said innermost and outermost circumferences (Paragraph 50, lines 6-12. More specifically, any write speed between the inner and outer circumferences is also a reference parameter (namely, the middle speed) and Figure 3, Element 108).

Regarding claim 12, Chen discloses a read/write apparatus (Abstract) comprising means for reading and analyzing parameters written on disk (Paragraph 43), means for analyzing said parameters and determining interpolation parameters (Paragraph 46), means for, based on at least a parameter for a highest speed, a parameter for a lowest speed, and a parameter for a middle speed, determining parameters for all possible speeds (Figure 3, Elements 106 and 108).

Regarding claim 13, Chen discloses means for performing a trail write operation to obtain said parameter for said highest speed (Figure 3, Elements 100 and 102), means for performing a test write operation to obtain said parameter for said lowest speed (Figure 3, Elements 100), and means for, based on said parameters obtained through said test write operations and third parameter for a middle speed written on said disk, determining said parameters for all possible speeds (Figure 3, Elements 106 and 108).

Regarding claim 18, Chen discloses a method for writing information to an optical disk by irradiating laser light thereto (Abstract), said optical disk storing a first writing waveform parameter for a first write speed (Figure 3, Element 100, inner radius test write), a second writing waveform parameter for a second write speed higher than said first write speed (Paragraph 50, lines 6-12. More specifically, any write speed between the inner and outer circumferences is also a reference parameter (namely, the middle speed)), a third writing waveform parameter for a third write speed higher than said second write speed (Figure 3, Element 100, outer radius test write), said method comprising the step of: writing information at said second write speed by use of a fourth

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writing waveform parameter obtained as a result of converting said second writing waveform parameter (Figure 3, Elements 106 and 108 (Vc)).

Regarding claim 19, Chen discloses writing information at said first write speed by use of a fifth writing waveform parameter obtained as a result of a trail write operation at said first write speed (Figure 3, Element 102 corresponding to the inner radius), writing information at said third write speed by use of a sixth writing waveform parameter obtained as a result of a test write operation at said third write speed (Figure 3, Element 102 corresponding to the outer radius), writing information at said second write speed by use of a writing waveform parameter obtained as a result of approximating said fourth writing waveform parameter (Figure 3, Element 108 (Pc)).

Regarding claim 20, Chen discloses wherein energy received by said optical disk when laser light is irradiated based on said second writing waveform parameter is substantially equal to that receiving by said optical disk when laser light is irradiated based on said fourth writing waveform parameter (Figure 2, Elements Vc and Pc. More specifically, the write power for the middle speed remains substantially the same).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as applied to claims 3-4, 12-13, and 18-20 above, and further in view of Sato (US 6,563,775).

Regarding claim 5, Chen does not disclose the specific writing waveform used during CAV writing. In the same field of endeavor, Sato discloses an optical disk unit which utilizes CAV writing (Column 3, lines 1-6) and a writing waveform that has a multi-pulse portion and is divided into three blocks such as a front pulse, said multi-pulse portion, and a back pulse portion (Figure 3), and in a long mark, said front and back pulses are fixed, and only the number of pulses of said multi-pulse portion changes with changing mark length (Figure 6, Elements s8 and s9. More specifically, pulses 1 and 2 of Figure 3 remain constant).

One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to provide the optimum recording pulse of Sato to the method for controlling a writing waveform of Chen, motivation being to make it possible to always record the information under a stable recording condition in conformance with the CAV system (Column 4, lines 1-7 of Sato).

Regarding claim 6, Sato discloses converting a writing waveform parameter such that average write energy of said multi-pulse portion (per unit time) is maintained at a same value for each linear velocity (Column 13, lines 13-30).

Regarding claim 7, Sato discloses continuously changing power of a bias portion to maintain write energy of said multi-pulse portion per unit time at a same value (Figure 6, Element s8).

Regarding claim 8, Chen discloses wherein said first writing waveform parameter (for said highest write speed) and said second writing waveform parameter (for said lowest write speed) are optimum parameters though test write operation (Paragraph 43), said third writing waveform parameter (for said middle write speed between said highest and lowest write speeds) is a recommended parameter for said middle write speed written on said disk before beforehand (Paragraph 4 and Paragraph 50, lines 6-12. More specifically, any write speed between the inner and outer circumferences is also a reference parameter (namely, the middle speed)).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US PgPub 2003/0123352) and in view of Official notice.

Regarding claim 9, Chen discloses a method for controlling a writing waveform on an optical disk (Abstract) and performs CAV writing to a disc from an inner circumference to an outer circumference (Paragraph 13 and Figure 3), said method using a writing waveform parameter for the outer radius as a first parameter (Figure 3, Element 100, outer radius), a writing waveform parameter for the inner radius as a second parameter (Figure 3, Element 100, inner radius), a recommend writing waveform parameter for the middle speed on said disk as a third parameter (Figure 3, Element 106 (Vc)). Chen does not disclose the actual write speeds for the inner, outer, and middle write speeds of the disc. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use 2X, 3X, and 5X as given write speeds, since it has been held that discovering an optimum value of a

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result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Furthermore, Chen does not disclose the use of a DVD-RAM as the optical media being recorded on. The examiner is taking Official notice that it was well known in the art at the time of the applicant's invention to use DVD-RAM in conjunction with CAV.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide a DVD-RAM disc to the method of controlling a writing waveform of Chen, motivation being to increase the storage density of the media used in Chen (compact disc).

Allowable Subject Matter

Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: Regarding claim 21, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the method as claimed in claim 20, wherein: **said second writing waveform parameter includes a parameter for a multi-pulse component of laser light to be irradiated; and said method further comprises a step of: obtaining said fourth writing waveform parameter by changing bias power of a multi-pulse component of said second writing waveform parameter.**

Regarding claim 22, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the method as claimed in claim 20, wherein: **said second writing waveform parameter includes a parameter for a multi-pulse component of laser light to be irradiated; and said method further comprises a step of: obtaining said fourth writing waveform parameter by changing write power of a multi-pulse component of said second writing waveform parameter.**

Regarding claim 23, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the method as claimed in claim 20, wherein: **said second writing waveform parameter includes a parameter for a multi-pulse component of laser light to be irradiated; and said method further comprises a step of: obtaining said fourth writing waveform parameter by changing a pulse width of a multi-pulse component of said second writing waveform parameter.**

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yokoi (2002/0085470) discloses an optical information recorder employing an improved recording power control scheme. Yokoi (US 6,459,666) discloses an information recording apparatus and method.

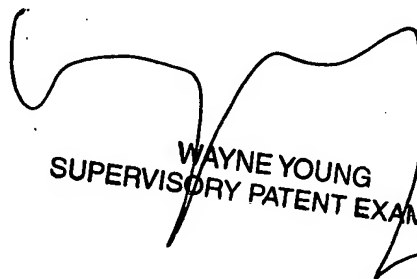
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas Alunkal


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER